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Hartley Moyes

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Joseph W. Berenato, III  
Liniak, Berenato, Longacre & White, LLC  
Suite 240  
6550 Rock Spring Drive  
Bethesda, MD 20817

EXAMINER

NGUYEN, CHI Q

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Appeal 2009-004348  
Application 09/985,673  
Technology Center 3600

Before JENNIFER D. BAHR, STEVEN D.A. McCARTHY and  
MICHAEL W. O'NEILL, *Administrative Patent Judges*.

## DECISION ON APPEAL

STATEMENT OF THE CASE

The Appellant appeals under 35 U.S.C. § 134 from the Examiner's decision finally rejecting claims 18-20, 25-29, 32-36 and 39 under 35 U.S.C. § 103(a) as being unpatentable over Lynch (US 5,766,774, issued Jun. 16, 1998); and finally rejecting claims 23, 24, 30, 31, 37 and 38 under § 103(a)

1 as being unpatentable over Lynch and Aufderhaar (US 5,219,634, issued  
2 Jun. 15, 1993). We have jurisdiction under 35 U.S.C. § 6(b).

3 We REVERSE. We enter NEW GROUNDS OF REJECTION against  
4 independent claims 18 and 33 under 35 U.S.C. § 102(b) as being anticipated  
5 by Hansen (US 4,812,188, issued Mar. 14, 1989) or, in the alternative, under  
6 § 103(a) as being unpatentable over Hansen.

7 Claims 18 and 33 are independent. Claim 18 recites:

8 18. A hollow door comprising:

9 a door frame; and

10 first and second door skins attached to said  
11 door frame so as to define a hollow core area there  
12 between, at least one of said skins being a  
13 reformed molded wood composite door skin  
14 having molded therein a plurality of panels,

15 wherein said at least one molded door skin  
16 has a bond strength of at least about 2.0 N/mm<sup>2</sup>.

17  
18 ISSUES

19 Independent claim 18 recites that at least one of a first and a second  
20 door skin has a bond strength of at least about 2.0 N/mm<sup>2</sup>. Independent  
21 claim 33 recites that both the first and second door skins comprise remolded  
22 wood composites having bond strengths of at least about 2.0 N/mm<sup>2</sup>. The  
23 Examiner finds that Lynch fails to disclose a molded door skin having a  
24 bond strength of at least about 2.0 N/mm<sup>2</sup>. (Ans. 3 and 6). The Examiner  
25 does not find that any disclosure of Lynch or Aufderhaar makes up for this  
26 deficiency. Instead, the Examiner concludes that the bond strength of the  
27 door skin would have been an obvious engineering design choice. The  
28 Examiner bases this conclusion in part on findings that the Appellant has not

1 shown that the 2.0 N/mm<sup>2</sup> is critical to producing any unexpected result and  
2 that the Appellant's Specification indicates that high bond strength is a  
3 desirable property of a door skin. (Ans. 6). The Appellant disagrees with  
4 the Examiner's conclusion. (*E.g.*, Reply Br. 4).

5       Aufderhaar summarizes the disclosures of several prior art patents  
6 relating to doors, including Hansen. Aufderhaar's summary of the  
7 disclosure of Hansen suggests that Hansen discloses a process for making a  
8 covering plate member or skin for a door substantially identical to that  
9 disclosed by the Appellant. (*See* Aufderhaar, col. 1, ll. 53-66). A review of  
10 Hansen's disclosure appears to confirm this suggestion.

11       This appeal turns on two issues:

12               Has the Appellant shown that the Examiner erred in  
13               concluding that it would have been a matter of obvious  
14               engineering design choice to incorporate a door skin having a  
15               bond strength of at least about 20 N/mm<sup>2</sup> into a hollow core  
16               door?

17               Are claims 18 and 33 subject to new grounds of rejection  
18               under § 102(b) as being anticipated by Hansen or, in the  
19               alternative, under § 103(a) as being unpatentable over Hansen?  
20

## 21                               FINDINGS OF FACT

22       The record supports the following findings of fact ("FF") by a  
23 preponderance of the evidence.

24       1.     The Appellant's Specification discloses forming a door skin  
25 from a flat blank 10 composed of medium density fiber bound together by a  
26 thermosetting urea formaldehyde resin. (Spec. 13, ll. 7-20).

2. The Appellant's Specification discloses that the flat blank *10* should have a density of at least about 550 kg/m<sup>3</sup> and a thickness of 3 mm to 7 mm. (Spec. 14, ll. 1-3).

3. The Appellant's Specification discloses that at least some of the binder in the flat blank should not be cured. (Spec. 14, ll. 8-10).

4. The Appellant's Specification discloses that later curing of the uncured portion of the binder during a reforming process results in the reformed door blank attaining a significantly higher hardness than the hardness attained by molded skins not subject to the Appellant's reforming process. (Spec. 14, ll. 12-17).

5. The Appellant's Specification discloses preheating the flat blank *10* to a temperature of about 80°C to 100°C for 30-90 seconds and then moisturizing the flat blank *10* at the preheating temperature with steam. (Spec. 14, ll. 21-24; *id.* at 15, ll. 2-8, 12-18 and 20-23; *id.* at 15, l. 29 – 16, l. 3).

6. The Appellant's Specification discloses applying melamine or urea conditioning resin to the preheated, moisturized flat blank *10*. (Spec. 16, ll. 14-16 and 18-20). The Appellant's Specification discloses that the conditioning resin provides increased hardness to the resulting molded skin. (Spec. 16, ll. 24-27).

7. The Appellant's Specification discloses placing the flat blank *10* between heated platens *17, 19*. The platens *17, 19* apply heat and pressure to the flat blank *10* to reform the blank in conformance with the shape defined by the interface of the platens *17, 19*. (Spec. 19, ll. 14-22).

8. The Appellant's Specification discloses applying uninterruptedly increasing pressure to one or both of the platens *17, 19* to

1 cause the platens 17, 19 to move toward one another so that the flat blank 10  
2 is relatively slowly reformed into the shape of a door skin 7. (Spec. 19, l. 27  
3 – 20, l. 3; *id.* at 20, ll. 8-10). The Appellant teaches that slowly applying  
4 uninterrupted increasing pressure to the flat blank 10 avoids substantial  
5 breakage of the resin bonds in the blank as the blank is reformed. (Spec. 22,  
6 ll. 13-17).

7 9. The Appellant's Specification discloses venting one of the  
8 platens 17, 19 in order to release steam, volatiles and similar gaseous  
9 products generated when the flat blank 10 is reformed. The Appellant  
10 teaches that venting one of the platens 17, 19 results in a stronger end  
11 product skin 7 than does intermittent venting of the press. (Spec. 19, ll. 4-  
12 10).

13 10. The Appellant's Specification discloses that "[s]tandard molded  
14 skins from Masonite Corporation, for example, typically have a bond  
15 strength of about 1.4 N/mm<sup>2</sup>, while reformed skins 7, 9 according to certain  
16 embodiments of this invention preferably have a bond strength of at least 2.0  
17 N/mm<sup>2</sup> and most preferably a bond strength of at least about 2.5 N/mm<sup>2</sup>."  
18 (Spec. 9, ll. 11-16).

19 11. The Appellant's Specification does not indicate that the steps of  
20 applying the conditioning resin or venting the reforming press are critical to  
21 producing bond strengths of at least 2.0 N/mm<sup>2</sup>.

22 12. Lynch discloses a door 10 including a front door skin 11 and an  
23 identical rear door skin 11A secured to opposite major surfaces of a door  
24 frame 20. Each of the front and rear door skins 11, 11A includes two panels  
25 14, 15. (Lynch, col. 6, ll. 6-29).

1           13.    Lynch discloses three conventional techniques for molding door  
2 skins of wood composite material, namely, a “wet” process, a “wet/dry”  
3 process and a “dry” process. (Lynch, col. 1, l. 33 – col. 2, l. 32). None of  
4 the three conventional techniques disclosed by Lynch for molding door skins  
5 includes reforming a flat blank formed by heating and pressing a mat.

6           14.    Lynch does not mention the strength or hardness of the door  
7 skins *11*, *11A*.

8           15.    Aufderhaar discloses a method for producing a panel or door  
9 core *10* including the steps of dipping a dried, compressible wood fiber  
10 board into a plastic resin mixture and then heating and pressing the board.  
11 (Aufderhaar, col. 5, ll. 39-43 and col. 6, ll. 11-16). Aufderhaar does not  
12 disclose reforming a flat blank formed from a wood composite material.

13           16.    Aufderhaar summarizes Eggers (US 4,146,662, issued Mar. 27,  
14 1979) as disclosing a solid core wood door having an overlaid laminate of  
15 phenolic resin-impregnated paper and veneer bonded to the front and rear  
16 surfaces of the core material. (Aufderhaar, col. 1, ll. 19-23).

17           17.    Hansen discloses a hollow core door including a plate member  
18 or skin placed on one side of a frame work *10* and another plate member or  
19 skin *12* placed on the other side of the frame work *10*. (Hansen, col. 3, ll. 5-  
20 12). Figure 3 of Hansen depicts the plate members as being placed on the  
21 frame work *10* so as to define a hollow core between the two plates. Both  
22 plate members or skins are made by forming a plate member *2* of wood  
23 composite material and reforming the plate member *2* before placing the  
24 plate member on the door frame *10*. (See Hansen, col. 3, ll. 4-15).

1           18.   Hansen does not describe the plate members 2, 12 as having a  
2   plurality of panels. Neither do any of Hansen's drawing figures depict a  
3   door skin having a plurality of panels.

4           19.   Figure 1 of Hansen depicts a mold platen 6 for the plate  
5   member or skin 2 as having a raised portion for forming one panel. The  
6   mold platen 6 is depicted with broken lines adjacent the raised portion. One  
7   of ordinary skill in the art would have understood these broken lines as  
8   indicating the location of a second raised portion which might have been  
9   used to form a second panel in the plate member or skin 2.

10          20.   Hansen describes a method for producing the plate members or  
11   skins from a base plate 14. The base plate 14 is produced as an only slightly  
12   compressed element of wood fiber mass with a urea-based binding agent.  
13   (Hansen, col. 3, ll. 25-36). The wood fiber mass is pressed to a thickness of  
14   3-4 mm and a bulk density of 400-600 kg/m<sup>3</sup>. (Hansen, col. 3, ll. 25-32 and  
15   41-43).

16          21.   Hansen discloses producing the base plate 14 with a low degree  
17   of heat so that the binding agent is only partially activated and not cured.  
18   (Hansen, col. 3, ll. 33-37).

19          22.   Hansen discloses applying a coating 16 of paper or veneer on  
20   both sides of the base plate 14 to form a plate member 2. (Hansen, col. 3, ll.  
21   16-18).

22          23.   Hansen discloses steaming the plate member 2 for  
23   approximately 30 seconds at 100°C immediately before pressing the base  
24   plate. (Hansen, col. 3, ll. 44-46). The steaming of the plate member 2  
25   necessarily will preheat and moisturize the plate member.



24. Hansen discloses pressing or reforming the plate member 2 to form depressed patterns in the plate member or skin. (Hansen, col. 3, 1. 60 – col. 4, 1. 2).

25. Hansen discloses pressing or reforming the plate member 2 with a gradual build up of pressure of approximately 20 kg/cm<sup>2</sup> over a period of approximately two minutes. (Hansen, col. 3, ll. 47-49). Hansen also discloses gradually increasing the temperature of the plate member 2 while pressing or reforming the plate up to an ultimate temperature of approximately 130°C. (Hansen, col. 3, ll. 49-57).

26. Hansen discloses that the heating and pressing of the plate member 2 while reforming the plate causes the urea-based binder to cure, resulting in a very strong final product. (Hansen, col. 3, l. 61 – col. 4, l. 2). Hansen's statement implies that one of ordinary skill in the art would have considered increased strength to be a desirable property of a door skin.

# PRINCIPLES OF LAW

Where claimed and prior art products

are produced by identical or substantially identical processes, the [Patent and Trademark Office] can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of [the] claimed product. Whether the rejection is based on ‘inherency’ under 35 U.S.C. § 102, on ‘prima facie obviousness’ under 35 U.S.C. § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO’s inability to manufacture products or to obtain and compare prior art products.

1 *In re Best*, 562 F.2d 1252, 1255 (CCPA 1977) (citations omitted); *see also*  
2 *In re Spada*, 911 F.2d 705, 708 (Fed Cir. 1990)(“[W]hen the PTO shows  
3 sound basis for believing that the products of the applicant and the prior art  
4 are the same, the applicant has the burden of showing that they are not.”)  
5

## 6 ANALYSIS

### 7 *The Examiner’s Rejection of Claims 18-20, 25-29, 32-36 and 39* 8 *Under § 103(a) as Being Unpatentable Over Lynch*

9 The Examiner finds that Lynch did not disclose a door skin having a  
10 bond strength of at least 20 N/mm<sup>2</sup>. (Ans. 3). Nevertheless, the Examiner  
11 concludes that the bond strength of the door skin would have been an  
12 obvious engineering design choice “since such a modification would have  
13 resulted in an expected result, ie. a stronger door skin.” (Ans. 6). The  
14 Examiner provides no evidence that such a choice would have been  
15 available to one of ordinary skill in the art, however.

16 On the other hand, the Appellant’s Specification states that certain  
17 embodiments of reformed molded door skins produced in accordance with  
18 the method disclosed in the Specification have bond strengths of at least 2.0  
19 N/mm<sup>2</sup>. (FF 10). The Specification identifies a manufacturer who produced  
20 a prior art door skin having a strength less than 2.0 N/mm<sup>2</sup>. (*Id.*) Lynch  
21 does not disclose reforming a flat blank formed by heating and pressing a  
22 mat. (FF 13).

23 As the Examiner correctly points out (*see* Ans. 6), the particular  
24 method disclosed by the Appellant’s Specification for producing a door skin  
25 is not a structural limitation on claims 18 and 33. In view of the Appellant’s  
26 arguments, however, it is incumbent on the Examiner to provide evidence

1 sufficient to support a finding that the level of ordinary skill in the art prior  
2 to the disclosure of the Appellant's Specification was sufficient to produce a  
3 molded wood composite door skin having a bond strength of at least 2.0  
4 N/mm<sup>2</sup>. The Examiner has identified no such evidence. Therefore, the  
5 Examiner has not established that the use of a wood composite door skin  
6 having a bond strength of at least 2.0 N/mm<sup>2</sup> in a hollow core door as recited  
7 in independent claims 18 and 33 was an obvious engineering design choice  
8 available to one of ordinary skill in the art.

9  
10 *The Examiner's Rejection of Claims 23, 24, 30, 31, 37 and 38*  
11 *Under § 103(a) as Being Unpatentable Over Lynch and Aufderhaar*

12 The Examiner relies on Aufderhaar for a teaching to apply an overlaid  
13 laminate of phenolic resin-impregnated paper over a blank before pressing  
14 the blank into a door skin. (Ans. 5; *see also* FF 16). The Examiner does not  
15 identify any teaching of Aufderhaar that, in combination with the teachings  
16 of Lynch, might have provided one of ordinary skill in the art an apparent  
17 reason to modify Lynch's door skin in a manner reasonably likely to  
18 increase the bond strength of at least one of the skins to at least 2.0 N/mm<sup>2</sup>.  
19 Therefore, the Examiner's reliance on Aufderhaar does not make up for the  
20 deficiency in the teachings of Lynch.

21  
22 *New Ground of Rejection of Independent Claims 18 and 33 Under*  
23 *§ 102(b) as Being Anticipated by Hansen or, in the Alternative, Under*  
24 *§ 103(a) as being Unpatentable over Hansen*

25 Hansen discloses each limitation recited in independent claims 18 and  
26 33. Alternatively, one of ordinary skill in the art would have had an  
27 apparent reason to modify the hollow core door structure disclosed by

1 Hansen in a manner which would include each limitation of the independent  
2 claims.

3 Hansen discloses a hollow door comprising a door frame; and first  
4 and second door skins attached to the door frame so as to define a hollow  
5 core area there between. (FF 17). Hansen discloses that both the first skin  
6 and the second skin are reformed molded wood composite door skins. (*See*  
7 *id.*) Although Hansen does not expressly disclose that each of the first and  
8 second door skins includes a plurality of panels, the depiction of the door  
9 skin in Figure 1 of Hansen implies that this is the case. (FF 18 and 19).

10 Even had it been found that Hansen does not disclose that each of the first  
11 and second door skins has a plurality of panels, the broken lines in Figure 1  
12 of Hansen would have suggested to one of ordinary skill in the art to include  
13 a plurality of panels in each door skin. (*See* FF 19).

14 Furthermore, a sound basis for belief exists that the first and second  
15 door skins disclosed by Hansen have bond strengths of at least 2.0 N/mm<sup>2</sup>.  
16 Hansen discloses a method for producing reformed wood composite door  
17 skins substantially identical to the method disclosed by the Appellant's  
18 Specification. Both Hansen's method and the method disclosed in the  
19 Appellant's Specification start with a plate member or flat blank including  
20 wood fibers and uncured or partially cured urea-based resin binder. Hansen  
21 discloses a base plate 14 having a range of thicknesses before coating with  
22 paper or veneer 16 within the lower end of the range of thicknesses of the  
23 flat blank 10 disclosed by the Appellant's Specification. Hansen discloses a  
24 range of bulk densities for the base plate 14 which overlaps the range of  
25 densities of the flat blank 10 disclosed by the Appellant. (*Compare* FF 1-3  
26 *with* FF 20 and 21).

1       The Appellant's Specification discloses preheating and moisturizing  
2 the flat blank 10 before reforming the blank. (FF 5). Hansen discloses  
3 steaming a plate member 2 prepared by coating the base plate 14 with paper  
4 or veneer 16. Hansen's steaming of the plate member 2 necessarily will  
5 have the effect of preheating and moisturizing the blank. (FF 22 and 23).

6       Both Hansen's method and the method disclosed in the Appellant's  
7 Specification compress the preheated and moisturized plate member or flat  
8 blank between heated platens to reform the plate member or the flat blank so  
9 as to conform to the shapes of platens. Both Hansen's method and the  
10 method disclosed in the Specification apply gradually increasing pressure to  
11 the platens when reforming the plate member or flat blank. (*Compare* FF 7  
12 and 8 *with* FF 24 and 25).

13       Although Hansen discloses neither applying a conditioning resin prior  
14 to reforming the plate member or flat blank nor venting one of the platens  
15 while reforming the plate member or flat blank (*see* FF 6 and 9), Hansen's  
16 method is substantially similar to the method disclosed by the Appellant.  
17 Both Hansen and the Appellant's Specification state that the step of  
18 reforming the plate member or flat blank under heat and pressure cures the  
19 remaining uncured binder in the door skin, resulting in greater strength or  
20 hardness. (*Compare* FF 4 *with* FF 26). The Appellant's Specification also  
21 discloses that relatively slowly reforming the plate member or flat blank by  
22 means of uninterruptedly increasing pressure prevents substantial breakage  
23 of bonds within the plate member or flat blank. (FF 8). On the other hand,  
24 the Appellant does not describe the steps of applying a conditioning resin  
25 prior to reforming the plate member or flat blank nor venting one of the

1 platens while reforming the plate member or flat blank as being critical to  
2 producing a bond strength of at least  $2.0 \text{ N/mm}^2$ . (FF 11).

3 Therefore, there is a sound basis for belief that the door skins of  
4 Hansen's hollow core door necessarily have a bond strength of at least  $2.0$   
5  $\text{N/mm}^2$ . This sound basis for belief is sufficient to establish a *prima facie*  
6 case that Hansen anticipates the subject matter of claims 18 and 33. *See In*  
7 *re Best*, 562 F.2d at 1255. Even if the Appellant should produce evidence  
8 sufficient to show that this belief is incorrect, the disclosure of Hansen  
9 indicates that one of ordinary skill in the art would have considered  
10 increased strength to be a desirable property of a door skin. (*See* FF 26). It  
11 would have been obvious at the time the subject matter of claims 18 and 33  
12 was made to optimize the strength of the door skins of Hansen's hollow core  
13 door by routine experimentation with parameters such as the bulk density of  
14 the base plate 14 or the conditions under which the plate member 2 was  
15 preheated and steamed before the reforming step. *See In re Aller*, 220 F.2d  
16 454, 456 (CCPA 1955).

## 18 CONCLUSIONS

19 The Appellant has shown that the Examiner erred in concluding that it  
20 would have been a matter of obvious engineering design choice to  
21 incorporate a door skin having a bond strength of at least about  $2.0 \text{ N/mm}^2$   
22 into a hollow core door. Therefore, the Appellant has shown that the  
23 Examiner erred in rejecting claims 18-20, 25-29, 32-36 and 39 under  
24 § 103(a) as being unpatentable over Lynch. Since the Examiner has  
25 provided no findings or technical reasoning to explain why Aufderhaar  
26 might make up this deficiency, the Appellant has shown that the Examiner

1 erred in rejecting claims 23, 24, 30, 31, 37 and 38 under § 103(a) as being  
2 unpatentable over Lynch and Aufderhaar.

3 On the other hand, claims 18 and 33 are subject to new grounds of  
4 rejection under § 102(b) as being anticipated by Hansen or, in the  
5 alternative, under § 103(a) as being unpatentable over Hansen.

6  
7 DECISION

8 We REVERSE the Examiner's decision rejecting claims 18-20 and  
9 23-39.

10 Pursuant to 37 C.F.R. § 41.50(b), we enter NEW GROUNDS OF  
11 REJECTION against claims 18 and 33 under 35 U.S.C. § 102(b) as being  
12 anticipated by Hansen or, in the alternative, under § 103(a) as being  
13 unpatentable over Hansen.

14 Under 37 C.F.R. § 41.50(b) a new ground of rejection has been  
15 entered. 37 C.F.R. § 41.50(b) provides that, "[a] new ground of rejection  
16 pursuant to this paragraph shall not be considered final for judicial review."

17 Regarding the new ground of rejection, Appellant must, *WITHIN*  
18 *TWO MONTHS FROM THE DATE OF THE DECISION*, exercise one of the  
19 following options with respect to the new ground of rejection, in order to  
20 avoid termination of the appeal as to the rejected claims:

21 (1) *Reopen prosecution*. Submit an appropriate  
22 amendment of the claims so rejected or new  
23 evidence relating to the claims so rejected, or both,  
24 and have the matter reconsidered by the examiner,  
25 in which event the proceeding will be remanded to  
26 the examiner. . . .  
27

1                   (2) *Request rehearing.* Request that the  
2                   proceeding be reheard under § 41.52 by the Board  
3                   upon the same record. . . .  
4

5                   No time period for taking any subsequent action in connection with  
6                   this appeal may be extended under 37 C.F.R. § 1.136(a) (2007).  
7

8                   REVERSED; 37 C.F.R. § 41.50(b)  
9

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11  
12  
13                  mls  
14  
15

16                  JOSEPH W. BERENATO, III  
17                  LINIAK, BERENATO, LONGACRE & WHITE, LLC  
18                  SUITE 240  
19                  6550 ROCK SPRING DRIVE  
20                  BETHESDA, MD 20817